

## OMAN YPSILON, A NEW GENUS AND SPECIES OF BLENNIID FISH FROM THE INDIAN OCEAN

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*Abstract.*—*Oman ypsilon* is described, based on a single specimen from Sur, Oman. The taxon differs from all other Omobranchini in having the following combination of characters: dorsal-fin spines X; pectoral-fin rays 13; infraorbital bones 4; nasal bones not touching or joined to each other; interorbital pores 2; median supratemporal sensory canal pore absent; ventral hypural plate fused to complex urostylar centrum. A key is given to the seven genera of Omobranchini.

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The classification of the omobranchin genera was last considered by Springer (1972). Subsequently (Springer and Gomon 1975; Springer 1981; Bath 1983), several new species, but no new genera, have been described in the tribe.

The present study was initiated as a result of a query from Dr. Richard Winterbottom, who had obtained a specimen of omobranchin that he was unable to assign to a genus or species. Dr. Winterbottom kindly allowed me to study the specimen and describe it. Although the specimen is assignable to the Omobranchini, and superficially resembles species of *Omobranchus*, *Omox*, and *Parentchelyurus*, its complex of characters does not clearly place it in any of the presently recognized omobranchin genera.

Before I decided to describe a new genus for the specimen, I attempted a cladistic analysis of the Omobranchini to determine if the new species might be placed reasonably in one of the three genera it resembled. I spent considerable time searching for, and coding, characters for the analysis, which was performed using the well-known WAGNER 78 computer program developed by J. S. Farris. Ultimately, insoluble problems with coding characters, lack of enough characters to resolve relationships, and peculiarities of the computer program convinced me to abandon the results of the analysis. I wish to emphasize that my decision was not based on disagreement with the results of the analysis but on dissatisfaction with the soundness and sufficiency of the data and program on which the analysis was based.

*Methods.*—Measurements were made to the nearest 0.1 mm using needlepoint dial calipers. Standard length (SL) was measured from the mid-tip of the snout to the mid-base of the caudal fin. Vertical-fin elements were measured from the rear axil at the base of the element to the distal tip of the element, without allowance for curvature of the element. Gill-opening depth is the distance between the dorsalmost and ventralmost points of the opening. Other measurements are self-explanatory.

The holotype was cleared using the trypsin method and stained with alizarin red s and alcian blue.

Other methods and terminology follow those of Springer (1972).

Key to the Genera of Omobranchini

1. Cirri present on rims of anterior and posterior nostrils; circumorbital pores 9 to 12 (usually 10); one or more supratemporal canal pores on occiput just anterior to median supratemporal pore . . . . . *Laiphognathus* Smith
  - No cirri present on rims of nostrils (anterior nostril may open at end of slender tube); circumorbital pores 6 to 10 (rarely more than 9, and modally less than 9, in any species); no supratemporal canal pores on occiput anterior to median supratemporal pore, which may be absent . . . . . 2
2. Mandibular pores 2 . . . . . 3
  - Mandibular pores 3 . . . . . 4
3. Dorsal-fin spines modally 11 or 12; pectoral-fin rays modally 13 . . . . .
  - . . . . . *Parenchelyurus* Springer
  - Dorsal-fin spines modally 7 to 10; pectoral-fin rays modally 14 to 16 . . . . . *Enchelyurus* Peters\*
4. Dorsal-fin spines 10; ventral hypural plate fused to urostylar complex; median supratemporal pore absent; interorbital pores 2; gill opening extending ventrally to level opposite base of dorsalmost pectoral-fin ray . . . . . *Oman* Springer
  - Dorsal-fin spines modally 11 to 13; ventral hypural plate autogenous; median supratemporal pore present or absent; interorbital pores modally 2 to 4; gill opening varying from restricted to area dorsal to level of pectoral-fin base to extending ventrally to level opposite ventralmost pectoral-fin ray . . . . . 5
5. Median supratemporal pore usually present; interorbital pores modally 2 or 3; lateral-line tubes present or absent; gill opening restricted to area dorsal to level of 7th from dorsalmost pectoral-fin ray (usually restricted to level dorsal to 3rd from dorsalmost ray); infraorbital bones 4 or 5 (5 in most species); thin, fleshy crest on top of head present or absent . . . . . *Omobranchus* Ehrenberg
  - Median supratemporal pore usually absent; interorbital pores modally 4; lateral-line tubes absent; gill opening extending ventrally at least to level of 8th from dorsalmost pectoral-fin ray; infraorbital bones 3 or 4 (usually 4); no fleshy crest on top of head . . . . . 6
6. Total dorsal-fin elements 30 or 31; segmented anal-fin rays 20 or 21; nasal bones joined dorsally . . . . . *Haptogenys* Springer

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\* Smith-Vaniz (1976:154) followed Springer (1972) in reporting that the postcleithra of *Enchelyurus* (Omobranchini) consist of a few fragments of bone. Actually, the ventral postcleithrum of *Enchelyurus* is always present and complete, and appears similar to that of *Phenablennius* (*Phenablenniini*; Springer and Smith-Vaniz 1972), which completely lacks the dorsal postcleithrum. The dorsal postcleithrum of *Enchelyurus* is either absent or reduced to a fragment of bone that appears near the dorsal end of the ventral postcleithrum.

Other than *Enchelyurus* and *Phenablennius*, only *Praealticus* Schultz and Chapman (*Salarini*) among the Blenniidae has modified the structure of the postcleithra. In *Praealticus*, the dorsal postcleithrum is represented by a dorsally positioned fragment of bone; another fragment of bone occurs ventral to the dorsal fragment, but it is not clear whether this represents a second fragment of the dorsal postcleithrum or a fragment of the ventral postcleithrum (Smith-Vaniz and Springer 1971, fig. 15).

- Total dorsal-fin elements 27 to 29; segmented anal-fin rays 17 to 19; nasal bones separated for their entire length . . . . . *Omox* Springer†

*Oman*, new genus

*Diagnosis.*—A member of the blennioid tribe Omobranchini with: ventral hypural plate fused to complex urostylar centrum; basibranchials 2 and 3 reduced, present only as cartilage; frontals not fused to each other; basisphenoid well developed (but lacking belophragm); no kinethmoid (Springer 1968: fig. 13); dorsal and ventral postcleithra normal; nasal bones not touching each other; no cirri on head; median supratemporal sensory canal pore absent; interorbital pores 2.

*Etymology.*—*Oman* is derived from the name of the country of origin of the type species. The gender is feminine; the stem is “oman.”

*Type-species.*—*Oman ypsilon* Springer.

*Comparisons.*—The genera of Omobranchini can be distinguished in the above key. A fuller comparison is given in Table 1.

*Oman ypsilon*, new species

Fig. 1

*Description* (based on holotype and only known specimen; characters in generic diagnosis not repeated here).—Dorsal fin X, 25; slightly notched between spines and rays; attached by membrane to caudal-fin origin. Anal fin II, 24; attached by membrane to caudal peduncle. Vertebrae 11 + 29. Epipleural ribs on vertebrae 1 to 12; pleural ribs on vertebrae 3 to 11. Pectoral fin 13 (both sides). Pelvic fins I, 2 (left pelvic fin with splint of bone, probably representing vestigial third ray, closely applied to base of innermost segmented ray); membrane between segmented rays incised one-half length of innermost ray. Caudal fin with 6 dorsal and 6 ventral procurrent rays, 7 dorsal and 6 ventral segmented rays, and one epural; posteriormost dorsal procurrent ray and posteriormost ventral procurrent ray each attached to its own roundish, plate-like procurrent cartilage; anterior 5 dorsal procurrent rays attached to elongate procurrent cartilage reaching anteriorly to point dorsal to tip of neural spine of third preural vertebra (PU3); anterior 5 ventral procurrent rays attached to elongate procurrent cartilage reaching anteriorly to point ventral to tip of hemal spine of PU3; hypural 5 absent. Branchiostegals 6. Upper jaw and lower jaw each with recurved canine tooth posteriorly on each side and 23 incisor teeth. Infraorbital bones 4, dorsalmost very small. Ventralmost point of gill opening opposite level of dorsalmost pectoral-fin ray.

Sensory canal pores (left-right): Circumorbital (=supraorbital + infraorbital) 9-8; interorbital 2 (total); mandibular 3-3; preopercular 6-5; supratemporal 4-4 (no median predorsal pore); bi-pored lateral-line tubes 0-2, reaching posteriorly to vertical from interspace between dorsal-fin spines 2 and 3 (on right side of specimen).

Measurements in mm (and as percent SL): Standard length 32.5; head length 7.0 (21.5); snout length 2.4 (13.5); orbital diameter 2.1 (6.5); interorbital width

† Because of superficial external similarity, it is possible that *Phenablennius* (*Phenablenniini*) will key to *Omox*. *Phenablennius* differs most obviously from *Omox* in having 3 segmented pelvic-fin rays (versus 2) and 6 circumorbital sensory pores (versus 7 or 8, rarely 7).



Fig. 1. *Oman ypsilon*, Royal Ontario Museum 40208, male 32.5 mm SL, Sur, Oman (drawn by P. K. Hollingsworth).

Table 1.—Comparison of characters among the genera of Omobranchini. Abbreviations: A = absent; Au = autogenous; BB = basibranchials; C = cartilaginous; CO = circumorbital; Dpc = dorsal postcleithrum; F = fused; Fc = fused to complex urostylar centrum; IO = interorbital; MS = median supratemporal; N = normal; P = present; S = separate; V = vestigial; Vhp = ventral hypural plate. Parenthetical numbers after generic names indicate number of included species.

Character	<i>Omobranchus</i> (21)	<i>Omax</i> (2)	<i>Parenchelyurus</i> (2)	<i>Laiphogenathus</i> (1)	<i>Haplogemys</i> (1)	<i>Enchelyurus</i> (5)	<i>Oman</i> (1)
Dorsal-fin							
Spines	10 to 14 (modally 12 or 13)	12	11 to 13 (rarely 13)	10 to 12 (rarely 10 or 12)	12	6 to 11 (rarely 6 or 11)	10
Rays	16 to 26 18 to 27	15 to 17 17 to 19	17 to 20 18 to 21	18 to 21 19 to 23	17 to 19 20 to 21	19 to 27 18 to 24	25 24
Anal-fin rays							
Vertebrae	10 to 12	10	10 to 11 (rarely 11)	10	10	9 to 12 (rarely 9 or 12)	11
Precaudal							
Caudal	26 to 33	24 to 26	24 to 28	25 to 29	28	23 to 30	29
Pectoral fin	12 to 14 (modally 13)	12 or 13	13 or 14 (rarely 14)	12 to 14 (rarely 14)	13	13 to 17 (rarely 13 or 17)	13
Lateral-line tubes	0 to 10	0	0 or 5 to 11	0 to 5 (rarely 0)	0	3 to 10 (rarely 9 or 10)	0 or 1
MS pore	P	P or A (usually A)	P	P	A	P	A
IO pores	1 to 4 (rarely 1 or 4)	3 to 5 (usually 4)	3	3	4	3	2
MP pores	3	3	2	3	2 or 3 (usually 3)	2	3
CO pores	6 to 10 (modally 7 or 8)	7 or 8 (rarely 7)	6 to 8 (usually 7)	9 to 12 (modally 10)	8	7	8 or 9
Nasal bones	S	S	S	S	joined	S	S
Infraorbitals	4 or 5	3 or 4	4	4	4	3	4
Frontals	S	S	S	S	S	F	S
Kinethmoid	A	A	P or A	P or A	P	P	A

Table 1.—Continued.

Character	<i>Omobranchus</i> (21)	<i>Omox</i> (2)	<i>Paranchelyurus</i> (2)	<i>Laiphognathus</i> (1)	<i>Haptogenys</i> (1)	<i>Enchelyurus</i> (5)	<i>Oman</i> (1)
BB 1 and 2	N	N	V or C	C	N	N	C
Hypural 5	P or A	P or A	A	A	A	A	A
Vhp	Au	Au	Au	Fc	Au	Fc	Fc
Epurals	1 or 2	1	1	1	1	2	1
Dpc	P	P	P	P	P	A	P
Cirri on nostrils	A	A	A	P	A	A	A
Fleshy crest on head	P or A	A	A	A	A	A	A

0.7 (2.2); predorsal length 7.6 (23.4); preanal length 4.5 (13.8); depth at anus 5.3 (16.3); caudal peduncle depth 2.3 (7.3); caudal peduncle length 2.4 (13.5); length of: 1st dorsal-fin spine 1.5 (4.6), 2nd dorsal-fin spine 1.7 (5.2), 5th dorsal-fin spine 2.6 (8.0), 10th dorsal-fin spine 2.7 (8.3), 5th dorsal-fin ray 3.4 (10.5), 10th dorsal-fin ray 3.8 (11.7), 15th dorsal-fin ray 4.2 (12.9), 20th dorsal-fin ray 3.9 (12.0), 25th dorsal-fin ray 2.2 (6.8), 1st anal-fin spine 0.5 (1.5), 2nd anal-fin spine 1.1 (3.4), 1st anal-fin ray 1.8 (5.5), 5th anal-fin ray 2.3 (7.1), 10th anal-fin ray 2.7 (8.3), 15th anal-fin ray 3.1 (9.5), 20th anal-fin ray 2.8 (8.6), 24th anal-fin ray 2.3 (7.1), longest segmented pelvic-fin ray 4.0 (12.3), shortest segmented pelvic-fin ray 2.8 (8.6), longest pectoral-fin ray 5.0 (15.4), longest caudal-fin ray 5.7 (17.5); gill opening depth 1.0 (3.1).

Color pattern (preserved): Ground color of head and body pale. Prominent dark-dusky, U-shaped marking on head, with arm of U originating laterally on nape, extending anteroventrally along nape and over eye, down to and around snout tip, and up opposite side of head; sparsely distributed group of melanophores extending posteriorly from mid-postorbital margin; indications on body of about 9 narrow, irregularly-shaped bands of sparsely distributed melanophores separated by wider unmarked areas. Membranes of spinous dorsal fin covered with fine, evenly-distributed melanophores; segmented-ray portion with melanophores restricted mostly to distal margin of fin. Anal fin with hazy stripe of fine melanophores along distal margin. Caudal fin with darkly dusky band of melanophores distally. Pectoral fins with sparsely distributed melanophores distally. Pelvic fins unmarked.

*Holotype*.—Royal Ontario Museum 40208, male, 32.5 mm SL (now cleared and stained and partially dissected), Sur, Oman (22°35'39"N, 59°32'E), depth 4 m, sandy rock reef over rocky sand, 100 m from shore, 1 Jun 1981, B. N. G. Simm.

*Etymology*.—The species name, here used as a noun in apposition, is based on the Greek name of the letter "U," in reference to the dark U-shaped marking on the anterodorsal surface of the head.

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#### Literature Cited

- Bath, H. 1983. *Omobranchus hikkaduwendis*, n. sp. von Ceylon (Pisces: Blenniidae).—*Senckenbergiana Biologica* 64(1/3):25–30.
- Smith-Vaniz, W. F., and V. G. Springer. 1971. Synopsis of the Tribe Salariaiini, with Description of Five New Genera and Three New Species (Pisces: Blenniidae).—*Smithsonian Contributions to Zoology* 73:1–72.
- Springer, V. G. 1968. Osteology and Classification of the Fishes of the Family Blenniidae.—*Bulletin of the United States National Museum* 284:1–85.

- . 1972. Synopsis of the Tribe Omobranchini with Descriptions of Three New Genera and Two New Species (Pisces: Blenniidae).—*Smithsonian Contributions to Zoology* 130:1–31.
- . 1981. Notes on Blenniid Fishes of the Tribe Omobranchini, with Descriptions of Two New Species.—*Proceedings of the Biological Society of Washington* 94(3):699–707.
- , and M. F. Gomon. 1975. Revision of the Blenniid Fish Genus *Omobranchus* with Descriptions of Three New Species and Notes on Other Species of the Tribe Omobranchini.—*Smithsonian Contributions to Zoology* 177:1–135.
- , and W. F. Smith-Vaniz. 1972. A New Tribe (Phenablenniini) and Genus (*Phenablennius*) of Blenniid Fishes Based on *Petrosirtes heyligeri* Bleeker.—*Copeia* 1972(1):64–71.

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